



## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of:

Kunihiro SHIMA

Group Art Unit: 1742

Application No.: 09/787,907

Examiner: Wilkins III, Harry D.

Filed: March 29, 2001

Attorney Dkt. No.: 108384-00016

For: AUXILIARY MATERIAL FOR USE WITH SUPERCONDUCTIVE MATERIAL

**DECLARATION UNDER 37 CFR § 1.132**Assistant Commissioner for Patents  
Washington, D.C. 20231

Sir:

Kunihiro SHIMA

hereby declares and states:

1. I am the inventor of the above application.
2. I am fully familiar with the subject matter of the above identified application, as well as the references relied upon by the Examiner in the issuance of the Office Action dated May 29, 2002.
3. I am fully familiar with United States Patent Number 5,236,523 (hereinafter referred to as the "Shibata patent"), United States Patent Number 3,114,631 (hereinafter referred to as the "Sistare patent"), and United States Patent Number 4,502,899 (hereinafter referred to as the "Tsuji patent").
4. I am aware that Claims 1-3 have been rejected in the Office Action dated May 29, 2002 under 35 U.S.C. 103 as obvious in light of the Shibata, Sistare, and Tsuji patents.

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5. I have conducted experiments to study the processability of the presently claimed alloys in comparison to those alloys disclosed in the Shibata reference. In the process of conducting these experiments, I manufactured an alloy that falls within the presently claimed ranges and an alloy that falls within the ranges disclosed by Shibata. Following the formation of these alloys, both alloys were subjected to pipe formation in order to inspect the processability of the alloys.

6. The alloys used in the experiments have the following compositions. Alloy 1 comprises 3 weight percent MgO and a balance of Ag, as recited in the ranges of Claim 1. Alloy 2, however, corresponds to the composition of Table I, specimen 2, of the Shibata reference. Alloy 2 comprises 5 weight percent Mg, 0.1 weight percent Ni, and the balance is Ag.

7. The alloys discussed in paragraph 6 were formed in the following manner. Alloy 1 was formed by following the steps contained in the Example of the pending specification. A columnar ingot was prepared through casting, the center of the ingot was bored to make it hollow and cylindrical, and the ingot was internally oxidized.

Alloy 2 was prepared in the manner described in the Example contained in page 4 of the Shibata patent to obtain an ingot. The ingot was then bored and internally oxidized in a manner identical to that as Alloy 1. It, like alloy 1, was then subjected to elongation in order to form a pipe shape with an external diameter of 25 mm, an internal diameter of 22 mm, and a thickness of 1.5 mm.

8. It is submitted that the processability of the alloys will be determined by the absence of cracks or breaks. Therefore, if either breaking or cracking occurs, the alloy is not suitable for being processed into the form of a pipe.

9 It was found that the presently claimed alloy (represented as Alloy 1) was successfully formed into a pipe without any problems. As can be seen in the attached Photo1, no cracks or breaks were detected in the resulting pipe.

However, the pipe that corresponds to the Shibata patent, as seen in Photo 2, is not satisfactory. It was observed that the Shibata alloy remained intact until the boring of the ingot. Additionally, as Photo 2 shows, cracking occurred during the elongation of the ingot. Therefore, the Shibata alloy does not possess the same properties as the present invention.

10. It is also noted that the presently claimed alloy is intended to be used with a superconductive material and that it is intended to be used after being formed into a pipe shape. However, the material disclosed in the Shibata patent is poor in processability and, therefore, becomes cracked or broken. Thus, the Shibata alloy is unserviceable. This is due to the amount of MgO contained in the Shibata alloy. If the amount of MgO exceeds the present range, then the processability of the resulting alloy decreases remarkably.

The undersigned declarant does hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Kazuhiko Shima

Date: 27 Aug. 2002

Photo.1

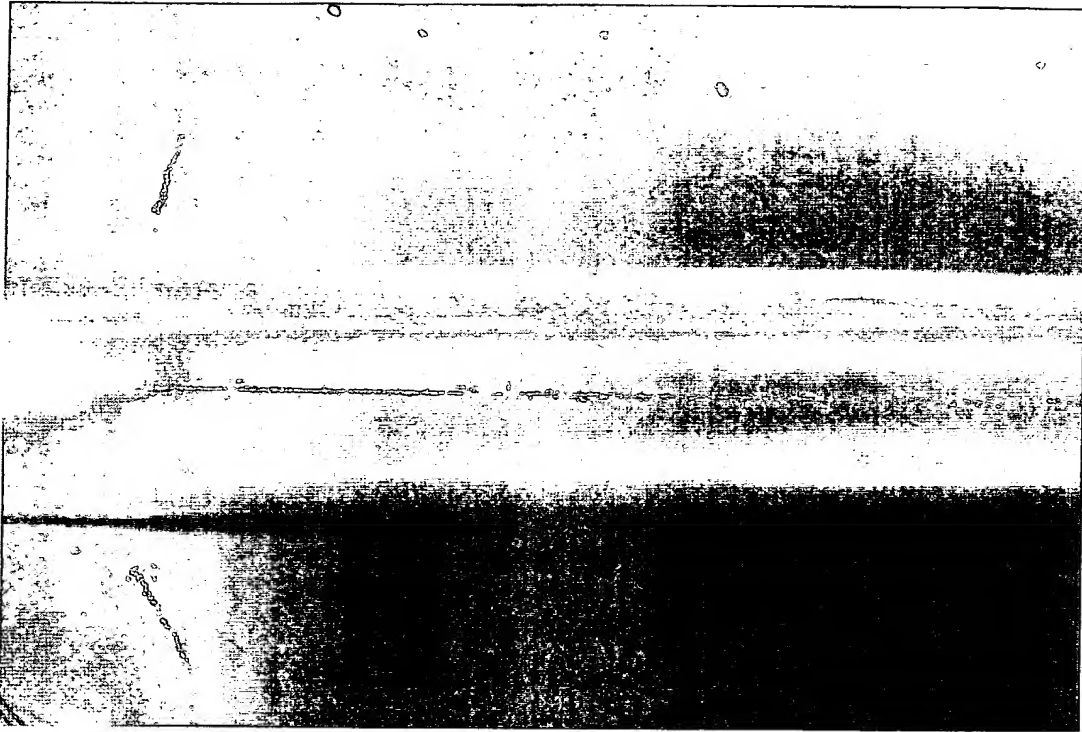


Photo.2

